MOLA: THE NEW APPROACH FOR MARS GLOBAL CARTOGRAPGY

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The MGS Orbiter is carrying the high-precision Mars Orbiter Laser Altimeter (MOLA) which, when combined with telemetered attitude data, provides a tie between inertial space and Mars-fixed coordinates to an accuracy of 100 m in latitude / longitude and 10 m in radius (1 sigma), orders of magnitude more accurate than previous global geodetic / cartographic control data. Over the 2 year MGS mission lifetime, it is expected that over 30,000 MOLA Global Cartographic Control Points will be prodced to form the basis for new and re-derived map and geodetic products, key to the analysis of existing and evolving MGS data as well as future Mars exploration.